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The Management Difference: Future Information Needs of Commercial Farmers and Ranchers

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Overview

Production agriculture is an industry dominated by closely held, family businesses. These firms have grown rapidly in size and in the volume of dollars they handle. But this growth and the advent of volatile economic conditions have severely strained the business management capabilities of farmers and ranchers. As a result, the capability to use information has become a critical management concern in today's agricultural firm.

Many producers are striving to improve their business management abilities. As they do so, they require guidance to successfully implement procedures on their farms and ranches. As the economic environment grows more complex, institutions that support the producer also must adapt to provide continually effective assistance. Individuals in these support roles must understand the emerging needs of the producer.

To meet these needs, a joint venture of the Agribusiness Industry Team of Authur Andersen & Co. and the Department of Agricultural Economics of the University of Illinois conducted an intensive study of the information-related practices of agricultural producers in the United States and Canada. The purposes of this study are to:

- Contribute to the understanding of current practices of innovative producers and how those efforts differ from the actions of all commercial farmers and ranchers, and
- Suggest changes in information management that are likely to be implemented on farms and ranches in the near future.

Individuals identified as leaders in the agricultural community participated in this study. Input for each participant was obtained through a questionnaire completed during the spring and summer of 1982. The experiences and opinions of three groups of individuals are summarized in this report. These groups are composed of:

- 269 innovative farmers and ranchers,
- 179 agricultural lenders, and
- 87 agricultural consultants.

The study's participants were selected from throughout the United States and Canada and represent a wide range of types of agricultural production. Although representing many regions and types of production, this sample was not randomly selected. Instead, the sample includes individuals believed to be leaders in the practice of business management within the agricultural firm. (A more complete description of the participants is presented in the Introduction and in the Appendix.)

Below are the four information-related topics examined in this report. Each of these topics is important to the agricultural producer striving to improve business management capabilities.

- Accounting procedures,
- Financial statement preparation and use,
- Management consulting needs, and
- Agricultural computer use.

Acknowledgments

This study is based on shared experiences and beliefs of 535 agricultural decision-makers. If this effort makes a contribution to our understanding of agricultural information needs, it is because those individuals devoted their valuable efforts to this study. The team that conducted this study sincerely appreciates their cooperation and assistance. Further, we gratefully acknowledge the assistance of those agricultural leaders who nominated individuals to participate in this study.

Finally, we must note that in only a few short months this study was designed and conducted, the results were analyzed, and a report was prepared. This venture could not have been completed without the cooperation and effort of numerous individuals working within the sponsoring institutions. Although too many to identify individually, the study team wishes to formally acknowledge the valuable contributions of its co-workers within Arthur Andersen & Co., the Survey Research Laboratory, and the College of Agriculture at the University of Illinois.

Conclusions and Highlights

This report examines future information needs of farmers and ranchers. The opinions of 535 farmers, ranchers, lenders and consultants form the basis of this investigation. Their responses are presented in detail in the body of this report. This section defines seven major conclusions that summarize the study's findings. Supporting evidence generated within the study is given for each of these conclusions.

To interpret the study's results, it is important to realize that the farmers and ranchers participating in the study were selected because they are regarded as innovative producers. Their responses refer to innovative farmers and ranchers such as themselves. In contrast, the lender and consultant respondents were asked to consider practices of all commercial farmers and ranchers. As the adoption of information practices proceeds, the majority of commercial farmers and ranchers are likely to implement the procedures of today's innovative producer.

Conclusion 1: An important management difference does exist between producers regarded as innovative and all commercial farmers and ranchers. Innovative producers tend to use information and information-related services more extensively.

- Innovative producers tend to use more sophisticated accounting methods:
  - Among the innovative respondents, 28% use a manual, double entry system, 39% use an accounting service bureau, and 11% directly enter transactions data into a computer.
  - The lender and consultant respondents estimate that seven out of 10 commercial farmers currently rely on manual, single entry accounting methods.
- Innovative producers are much more likely to be using a small business computer:
  - Only 3% of all commercial producers are thought to own a computer.
  - The producer respondents report that 22% of them own a computer.
  - One out of three of those computers are large microcomputers or small minicomputers.
- Innovative producers extensively use financial statements to document their financial position and economic performance:
  - Three out of four of the producer respondents report preparing balance sheets, income statements and projected cash flow statements.
  - 56% of these producers compare actual and projected cash flows.
  - A substantial portion of the innovative producers prepare financial statements more often than annually.
- Innovative producers use the services of management consultants:
  - More than 75% of the producer respondents have used each of the following consultants in the last two years:
    1. Attorney,
    2. Certified Public Accountant (CPA),
    3. Cooperative extension agent,
    4. Insurance agent, and
    5. Lender.
  - 65% of the producer respondents use a CPA to aid in preparing income tax returns.
  - 78% of the respondents report using an attorney in estate planning; 51% have used an accountant and 56% have used an insurance agent as a source of advice in estate planning.

Conclusion 2: Many farmers and ranchers will own small business computers within five years. A major problem that could impede computer adoption is the lack of quality assistance available to agricultural producers.

- Nearly all innovative producers are expected to acquire computers:
  - More than 80% of the producer respondents expect computers to be used for purposes such as:
    1. Maintaining production records,
    2. Monitoring receipts and expenditures,
    3. Forward planning, and
    4. Acquiring market information.
- Although only 3% of all producers are thought to currently own a computer, one out of six is expected to acquire a computer in five years.
  - With 300,000 commercial farmers and ranchers in the United States, this estimate suggests that 50,000 computer units will be acquired.
- Computer workshops are thought to be desired by 25% of all farmers and ranchers.

- More than half of all the respondents believe that the present quality and availability of computer-related assistance will be unsatisfactory in the future.

Conclusion 3: Financial statements will become standard management tools for farmers and ranchers. Training and assistance are likely to be needed if producers are to effectively use these tools.

- Nearly all of the respondents indicate that financial statements will be important to farmers and ranchers in five years.
- More than 80% of the respondents believe that preparing the balance sheet, income statement and projected cash flow statement will be *very* important to producers.
- About 70% suggest that comparing projected and actual cash flows will be *very* important.

Conclusion 4: A major transformation in agricultural accounting procedures will occur in this decade. The present reliance on manual, single entry methods will decline as computerized and more sophisticated methods are adopted.

- Sixty-three percent of the producer respondents predict that innovative producers will be directly entering transactions data into a computer in five years.
- Lenders and consultants estimate that the number of commercial farmers and ranchers using the single entry, manual method will decline by 25% in that period.
  - These changes most likely will be to use accounting service bureaus or to enter transactions data directly into a computer.
- The increasing importance of financial statements and the potential for CPA review or audit of those statements means that future recordkeeping practices will need to include good accounting techniques.
  - Lenders and consultants predict that one producer in six will be required by the lender to provide reviewed or audited financial statements.
  - More than one-third of the producer respondents indicate that some farmers and ranchers will be required to provide verified statements in the near future.

Conclusion 5: Despite the expected transformation in accounting procedures, many innovative producers or their family members will continue to perform the bookkeeping function.

- Of the producer respondents, 82% report that they, their spouses or another family member currently record financial transactions data.
- This figure is predicted to decline, but in five years more than 70% of the producer respondents still expect the producer or a family member to continue to perform that function.
- Possibly, the expected adoption of computers is expected to reduce the time requirements of this task, thereby allowing key personnel to continue to perform it.

Conclusion 6: Management consultants will play an increasingly important role in the effective management of the agricultural firm. Considerable dissatisfaction exists, however, with the present quality and availability of assistance in some important management areas.

- More than 90% of all the respondents predict that the following five services will be important to farmers and ranchers five years from now:
  1. Accounting or bookkeeping,
  2. Estate planning,
  3. Marketing,
  4. Financial analysis, and
  5. Computer use.
- Eighty percent of the respondents indicate that assistance in insurance coverage analysis and retirement planning will be important to agricultural producers.
- In the areas of marketing, financial analysis and using computers, one-half of the respondents believe that the present quality and availability of assistance will be unsatisfactory in the future.

Conclusion 7: The issue of information needs is a topic of considerable concern within the agricultural community.

- All of the study participants were selected because they are knowledgable leaders in agriculture.
- The overall response rate achieved in the study exceeded 83%.
- That rate was attained despite the need for the respondents to complete a lengthy survey questionnaire during the busy spring season.
- This voluntary response rate could be achieved only if the participants believed that the study topic was important.

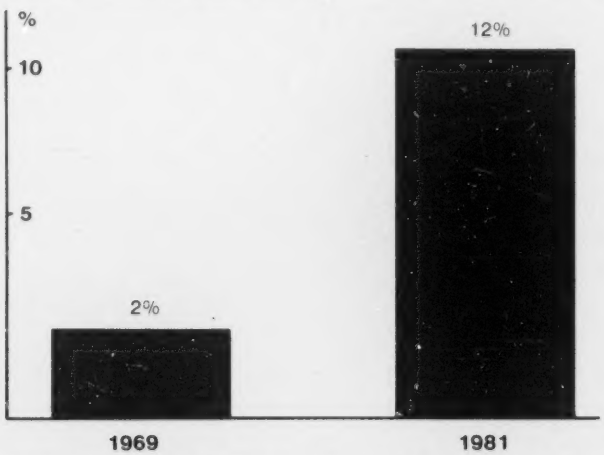
Introduction

Producing food and fiber commodities is a major industry in the United States and Canada. In 1980, the value of farm commodities produced in the United States was more than $150 billion and in Canada exceeded $15 billion. The value of farm commodities exported in that year was $41.3 billion and $8.2 billion, respectively. These exports were an important element in both nations' balance of payments position that year.

Many of the farms that produced those agricultural commodities are substantial business operations. In 1981, the number of farm and ranch units with sales above $100,000 numbered nearly 300,000 in the United States and almost 70,000 in Canada. Typically, these farms are closely held units that have many of the positive characteristics associated with the traditional family farm. Individuals operating and managing the business provide a significant portion of the labor, capital and management inputs on these units.

Today's commercial farm or ranch may have information needs as complex as those of much larger non-farm firms. Economic pressures of high input prices, particularly interest rates, combined with the variability of production and price inherent in production of many agricultural commodities, make effective management a critical survival skill on today's commercial farm and ranch.

Figure A
Farms with sales of $100,000 or more.



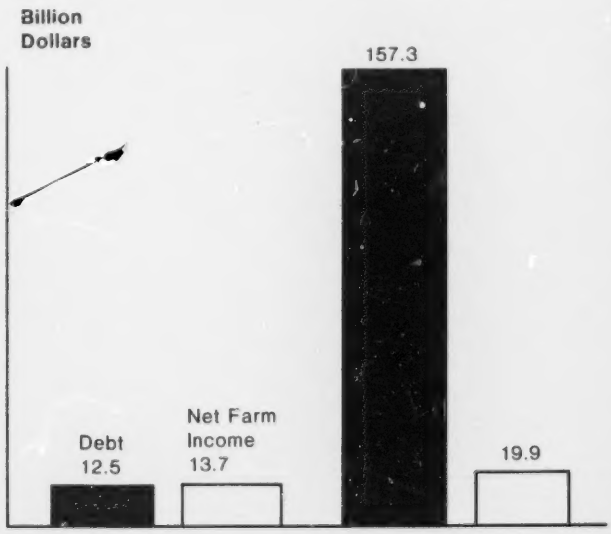
Percentage of farms with sales of more than $100,000

The growth of the farm firm has continued at a rapid pace over the last three decades. This growth, in both physical and financial terms, intensifies the need for management information. Figure A compares farm numbers in 1969 and 1981. Here farm size is measured by gross farm sales. Between 1969 and 1981, farms with sales of more than $100,000 increased from 2% to 12% of total farms.

Part of the change described in Figure A results from inflation of dollar values rather than physical growth of the farm unit. The management pressures, however, that result from handling additional dollars are real. Even growth due only to inflation strains a business information system and raises new management questions.

Expansion of the farm unit has led to a massive increase in the use of debt capital. As shown in Figure B, the amount of debt outstanding and annual net farm income were nearly equal in 1950. Recent data show that debt outstanding is now eight times the level of net farm income. Use of debt capital enhances the need for effective decision-making. In addition, information requirements are increased to satisfy the reporting needs of the providers of debt capital.

Figure B
Growth of agriculture's use of debt capital.



Efficient management requires the capability to monitor the farm's or ranch's operation and to generate reports describing the firm's economic performance. Forward planning is needed to evaluate the profitability and feasibility of current decisions. In addition to the producer's talents, today's complex environment requires expertise and management consulting for numerous business-related issues, such as financial decision-making, tax planning and business organization.

Both public and private sector institutions have major roles to play to ensure that these essential management activities can be performed. The public sector's research role is to develop new information-related techniques and tools to more effectively manage the farm firm. Its educational role requires that it inform producers of opportunities to improve business management performance. The private sector's role is to provide the necessary assistance and services those producers require.

For the public and private sectors to perform their roles, the needs of agricultural producers must be documented. To contribute to an improved understanding of current and future information needs of farmers and ranchers, a major study of those needs was undertaken during 1982. The results of that study are reported here. This project is a cooperative effort of Arthur Andersen & Co., a public accounting and professional services organization, and the Department of Agricultural Economics at the University of Illinois at Urbana-Champaign.

Topics Considered in Study

To document information needs, an intensive survey of farmers, ranchers, agricultural lenders and agricultural consultants was conducted. The results reported here summarize the responses of 535 individuals in these three groups. Each respondent works in a situation requiring an active knowledge of information needs of commercial farmers and ranchers.

The study's results are grouped into the following four categories:

- Accounting procedures,
- Financial statement preparation and use,
- Management consulting needs, and
- Agricultural computer use.

For each topic, the study documents current practices and capabilities of commercial farmers and ranchers. The study participants also project future needs through the 1980s.

The accounting procedures section investigates the process through which internal data is captured and manipulated within the farm firm. Defined are accounting concepts used, farm and non-farm personnel involved, and management reports required.

Financial statements describe the firm's financial position and economic performance — information needed by the farmer and rancher, as well as by interested outside parties. The types of financial statements prepared and their frequency of preparation indicate the firm's ability to document its financial situation.

As agricultural production firms grow larger and more complex, the need for outside expertise expands. The study examines present use and likely future needs for the services of several types of management consultants. Also considered in the study are the availability and quality of guidance in areas such as accounting, financial management, estate planning, business organization, and acquiring outside equity capital.

The advent of microcomputers has made computer ownership and use a possibility for commercial farmers and ranchers. Computer uses for management purposes are documented by the study respondents. Training needs also are defined.

Survey Participants

This study concentrates on the future information needs of commercial farmers and ranchers. To document these needs, individuals actively engaged in agricultural production and their advisers were surveyed. Included were farmers, ranchers, agricultural lenders and consultants from throughout the United States and Canada. An understanding of the agricultural adoption process aided in identifying and selecting individuals to participate in this study.

The agricultural production industry has been characterized by rapid adoption of innovations. Historically, adoption of technology has followed a pattern involving early adoption by a few innovative farmers and ranchers. General implementation follows a few years after testing by those in the innovator class.

Procedures to provide more effective business and financial management can be viewed as another technology to be adopted. Although one goal of the study is to document current information-related practices, the study's overriding purpose is to describe future information needs. To achieve that purpose, producers regarded as innovative and concerned about financial and business management issues are needed as participants in this study. If the traditional adoption pattern is followed, the procedures currently used by these producers are likely to be adopted by the majority of agricultural producers in the future.

Unfortunately, no quantitative data exists to identify the class of innovative producers. To produce a sample of such innovators, this study used an informed judgment approach to identify its participants. In the early part of 1982, faculty in colleges of agriculture and individuals in the agricultural finance community throughout the United States and Canada were contacted. Each of these individuals was asked to nominate producers, lenders and consultants who they felt are concerned about agricultural information needs. It was emphasized that farmers and ranchers were to be innovative leaders in the management of information, but not necessarily the largest producers or politically well-known. Further, only individuals operating family-oriented units were to be included in the producer group. The study's respondents are those nominated individuals who agreed to participate.

To capture differences in information needs on several types of farms, the study's participants were selected from throughout the United States and Canada. Figure C illustrates the geographical dispersion of the farmers and ranchers who participated. Figure D describes the regional pattern of lender and consultant participants. A more detailed description of the study procedures and the participants is in the Appendix.

Figure C
Regional distribution of producers participating in study (% of all producer respondents).

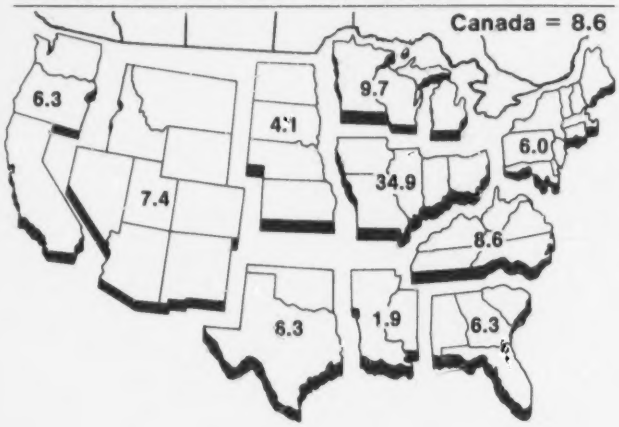
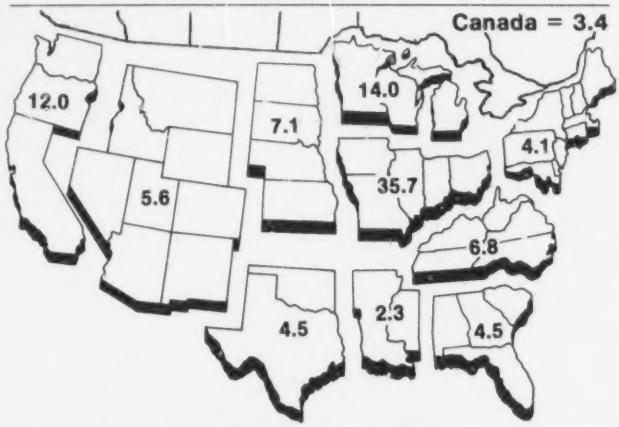


Figure D
Regional distribution of lenders and consultants participating in study (% of all lenders and consultants).



Survey Response Rates

Data for this research effort was gathered through a mailed questionnaire. Each respondent group completed a separate survey form. Unique forms were required because of the differing perspective that each group has of the information needs question. Also, using unique forms for each group permitted broader coverage of the information needs topic.

Because information needs is an immense subject area, the survey forms became lengthy documents. The shortest was the lenders' 10-page form. Consultants completed an 11-page survey and the producers completed a 19-page form. All surveys were mailed and returned in the spring and summer of 1982. Table 1 displays the response rates and number of usable surveys for each type of participant.

As with any research effort, funds available constrained the extent to which the investigation could be performed. The study's initial goal was to receive responses from at least 500 participants. Because participant cooperation was excellent, that goal was exceeded.

One of the most important results of this entire research effort may be in the response rate figures of Table 1. Each participant could be expected to have little excess time. In addition, problems in the mail system and human errors mean that a 100% response is impossible. Having more than 80% of the potential participants complete the study's lengthy questionnaires implies that information needs is regarded as an important topic.

Table 1
Response rate and number of participants by respondent group.

	Number of participants	Response rates (%)
Producers	269	80.1
Lenders	179	88.7
Consultants	87	84.5
Total	535	83.7

The producers' 80% response rate is particularly noteworthy. Information needs must be a topic of concern if 269 producers will complete a 19-page survey during their busy spring season.

Format for the Remainder of This Report

Results for the four subject areas of the study are discussed in the following order:

- Accounting procedures,
- Financial statement preparation and use,
- Management consulting needs, and
- Agricultural computer use.

In each section, the present extent of use is detailed. Documented are both the practices of the innovative farmers and ranchers in our respondent group and those of all commercial farmers and ranchers. Presented next are the respondent's opinions regarding information needs in the near future. The Appendix further describes the sample selection process, the respondents and the institutions conducting this research.

The producer respondent group provides invaluable information in this study. To better understand its responses, data describing the business characteristics of this group are provided as an introduction to each of the following sections. These data provide a flavor for the complex information needs of today's innovative producer.

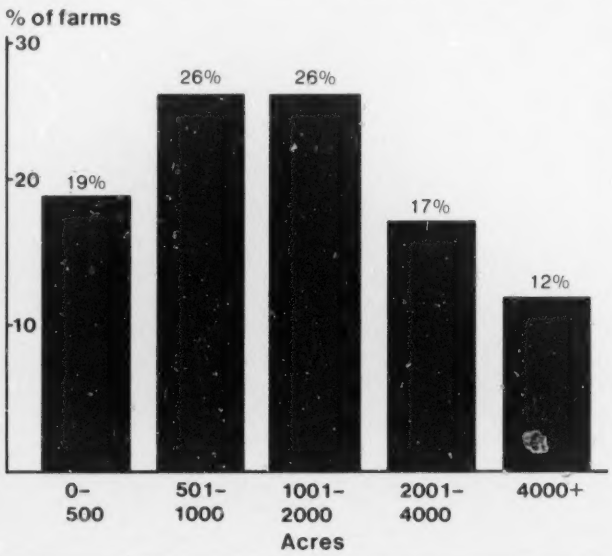
Accounting Procedures

Effective management of today's farm or ranch requires information. A major portion of that information must come from data generated within the agricultural firm. If producers are to make good decisions, they must adopt a procedure to capture data generated by their internal operations. Part of this procedure is their financial accounting system.

Producer Characteristics

Earlier, the growth of farms in terms of their annual value of farm sales was documented. This increased dollar volume puts pressure on the firm's accounting system. The physical size of the farm or ranch unit also affects the accounting system needed. Figure E describes the range of acreages operated by the producers participating in the study.

Figure E
Acreages of farms and ranches included in this study.



A majority of the producers (52%) operate units with 501 to 2,000 acres. Farms and ranches of substantially differing sizes are represented, however. Firms with 500 acres or less are operated by 19% of these producers. Units with more than 4,000 acres are represented by 12% of the respondents.

Acreage is, of course, not a complete measure of size, particularly when livestock is produced on 210 units in the study. Table 2 describes the participation of livestock producers in this study. These data suggest that a number of substantial livestock producers are included in the study. Table 3 lists the alternative types of crop production included. These figures indicate that a broad distribution of types of farming are represented by the producer respondents.

Table 2
Number of producer respondents with livestock operations.

All responses		Larger units only	
Livestock type	Number of units	Unit size	Number of units
Beef cows	84	More than 300	42
Beef stocker	59	More than 300	19
Feeder cattle	85	More than 1,000	18
Dairy cattle	53	More than 200	27
Swine		More than 2,000 pigs	
Farrow to finish	71	per year	38
Feeder pigs	28	More than 3,000	8
Poultry	17	More than 8,000	12
Sheep	15	More than 500	5

Table 3
Types of crop production reported by producer respondents.

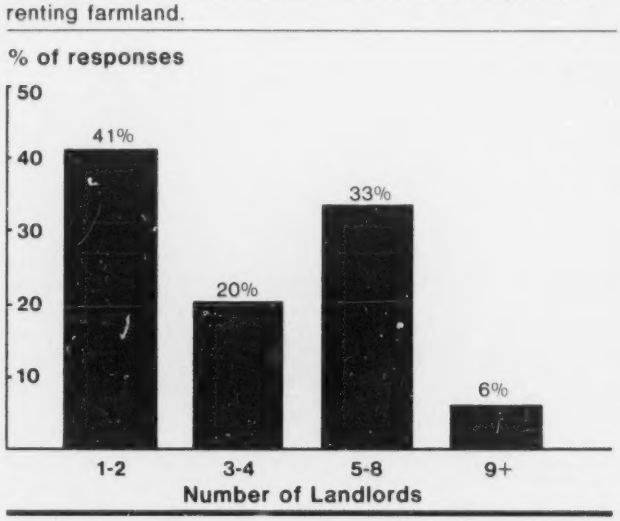
	Number of units
Cotton	12
Forage crops	147
Fruits	16
Grain crops	237
Tobacco	4
Vegetables	24
Total with some type of crop program	259

The size of the farms and ranches included in this study suggests a need for effective accounting procedures. Internal management concerns, however, are not the only reasons that accounting procedures are required. Producers may rent all or part of their operation's farmland. Non-operator landowners require an accounting of the firm's performance on their land. This need also places pressure on the farm or ranch accounting system.

Of the producers included in this study, 208 rented part or all of their farmland. As farms have grown larger, the number of landlords an individual operator must report to also has increased. A substantial number of

these producers (41%) reported renting ground from only one or two landlords (Figure F). But 33% reported having five to 12 landlords and 6% indicated having 13 or more landlords. The producers in the latter two categories are likely to have an accounting burden solely to satisfy the needs of the landowners with whom they work.

Figure F
Number of landlords reported by producer respondents renting farmland.



Current Accounting Procedures

To make effective financial management decisions, the farmer or rancher requires financial performance data. This data must be provided by the firm's accounting system. Unfortunately, statistics on accounting procedures normally are not reported. Therefore, this study attempts to describe the accounting methods currently used on farms and ranches.

Use of the checking account

Monitoring the checking account is a primary means of cash control in any business. In family-oriented operations, the extent to which personal and business transactions are commingled in the checking account is one indicator of the degree of financial accountability available. Therefore, the use of separate personal checking accounts by the producer respondents was investigated. In Table 4, responses from each group reflect sharply differing views.

Table 4
Use of separate checking accounts for personal expenditures.

	(Percent)
Producer respondents who have a separate personal account	87
Proportion of commercial producers who have a separate personal account:	
Lender estimate	38
Consultant estimate	32

The lender and consultant groups estimate that only one commercial farmer or rancher out of three would have a separate checking account for personal expenditures. Nine out of 10 of the producer respondents, however, have separate accounts. These differences do not necessarily suggest that either group has an incorrect view. Rather the results can be interpreted as indicating that the producer respondent group is more concerned about monitoring cash movements within the business than are commercial producers in general.

Accounting practices followed

Farm accounting systems often are cited as examples of the "shoebox" approach. Considering the relatively large farm size of some of the producer respondents, however, it seems likely that some of these producers are using relatively rigorous accounting procedures. Because of the recent availability of small business computers, it also is plausible that some farm and ranch accounting systems are computerized.

The accounting methods producer respondents currently use are detailed in Table 5. Again, a striking difference is noted between the actions of the innovative producers and the accounting methods believed to be used by all commercial producers. The lenders and consultants assert that the majority of commercial farmers and ranchers continues to rely on a manual, single entry procedure. Only 16% of the producer respondents, however, rely on single entry procedures.

Table 5 Accounting methods agricultural producers use.

Type of method	Proportion of producer respondents who currently use each method:	Proportion of all commercial farmers and ranchers that use each method:	
		Lender estimate	Consultant estimate
		(%)	
Manual, single entry	16	66	74
Manual, double entry	28	11	8
Service bureau	39	20	16
Entry of transactions data directly into computer	11	3	2
Other	6		

Producers in the study evidently are more concerned about accurate capture of accounting data than are farmers and ranchers in general. The majority of producer respondents employ a service bureau to process accounting data or are manually entering data into a double entry accounting system. One out of 10 directly enters transactions data into a computer. Of the respondents, 6% list a system under the "other" category. Analysis of the responses in the other category generally suggested that those producers were using a combination of the methods listed in Table 5.

These results indicate that the financial accounting methods used by this study's producer group are more

complex than the methods used by commercial farmers and ranchers in general. If the producer respondents do represent innovators on today's agriculture firms, many commercial farmers will be changing their accounting procedures to be more like those of the producer respondent group.

Future Accounting Methods

Lenders and consultants were asked to predict the accounting methods that commercial producers will use in five years. Their opinions are described in Table 6. Both groups foresee a movement away from single entry, manual methods. The consultants, however, predict a majority still will be using this method in five years. Neither group sees a shift toward a manual, double entry accounting system. Instead, growth is predicted in the service bureau and direct computer use approaches. Lenders and consultants agree that in five years, about five times as many producers will directly enter transaction data into a computer as are doing so today.

Table 6
Accounting methods that will be used by commercial farmers and ranchers in five years: lender and consultant opinions.

Type of method	Proportion who will be using each method: Lender estimate	Consultant estimate
	(%)	
Manual, single entry	39	52
Manual, double entry	14	10
Service bureau	34	27
Entry of transactions data directly into computer	13	11

The producer group was asked to predict which accounting method is most likely to be used by farmers and ranchers such as themselves in five years. Their responses (Table 7) indicate that manual accounting methods rapidly will diminish in popularity among innovative producers. Whereas 44% of these producers now use a manual approach, only 12% are expected to be doing so in five years.

Table 7
Accounting method most likely to be used by innovative farmers and ranchers in five years.

Type of method	Proportion of producer respondents selecting each method:
	(%)
Manual, single entry	7
Manual, double entry	5
Service bureau	25
Entry of transactions data directly into computer	63

Entering transactions data directly into a computer is expected to be the major accounting method used by innovative producers. More than 60% of the respondents suggested this method as the one most likely to be used in five years. It is interesting that the five-fold increase in the use of this method predicted by lenders and consultants is matched by the producers' expectations.

Who enters data?

In addition to investigating future accounting methods, survey respondents considered two related issues. The first issue is who enters transactions data into the financial recordkeeping system. Consideration of three specific capabilities that may be desired in farm and ranch accounting systems is the second issue.

The producer respondents were asked to indicate who is mainly responsible for entering financial transactions data. Their responses are shown in Table 8. Generally, producers themselves or a family member are responsible for entering transactions data into the financial record system. A non-family employee, such as a bookkeeper, performs this task for 15% of the units in this group.

Table 8
Who enters financial transaction data: producer responses.

Category	Currently	Five years from now
	(%)	
Producer	41	27
Spouse or family member	41	44
Non-family employee	15	20
Employee of service bureau or records association	3	9

Looking ahead five years, the producer respondents foresee only one clear trend. They believe that fewer producers will be performing the data entry task themselves. Non-family employees or service bureau and record association employees are expected to perform the data entry activities relinquished by producers. Despite that trend, the majority of the producers see themselves or a family member as being responsible for recording transactions data.

Record system capabilities

In addition to considering accounting methods, an attempt was made to better understand the capabilities of farm and ranch record systems. Three specific capabilities were investigated (Table 9). Determining costs and revenues by unit of production or by enterprise can be accomplished currently by more than 75% of the producer respondent group. Slightly fewer maintain a perpetual inventory for harvested crops. These results again support the concept that the producer respondents are farmers and ranchers interested in monitoring business performance.

Table 9
Current use and future needs for specified record system capabilities.

Capability	Proportion of producer group whose current record system can:	Proportion of farm record systems expected to have the following capabilities in five years:		
		Producer estimate	Lender estimate	Consultant estimate
	(%)			
Determine costs and revenues per unit of production	76	96	83	51
Determine costs and revenues by enterprise	80	98	83	55
Maintain a perpetual inventory for harvested crops	65	92	50	42

In five years, the producer group expects nearly all farmers and ranchers such as themselves to have record systems with these capabilities (Table 9). Lenders and consultants expect a substantial but lesser proportion of producers to have record systems with the three capabilities noted. Maintaining a perpetual inventory for harvested crops is seen as the least popular of the capabilities examined.

Section Summary

The agricultural firm must have an effective accounting system to capture the internally generated data needed for decision-making in today's economic environment.

Analysis of current accounting procedures suggests that a major gap exists between practices followed by the innovative producer respondent group and those used by all commercial farmers and ranchers. For example the lender and consultant group believe:

- Most producers do not have a separate personal checking account and
- A manual, single entry accounting system is used by two out of three of today's commercial farmers and ranchers.

The producer respondents, however, report that:

- Almost all have separate personal checking accounts;
- Relatively few use a manual, single entry system;
- A substantial majority use either a manual, double entry system or an accounting service bureau; and
- Most of their record systems have the capability to estimate costs and revenues on a subunit basis.

These results suggest that many commercial farmers and ranchers have accounting systems that fall far short of the systems used by the more innovative producers. If the adoption of accounting procedures follows the traditional technology adoption process, a movement toward more complex procedures should be expected.

The study's respondents agree that use of the manual, single entry accounting system will decline substantially in this decade. The lenders and consultants predict:

- Substantial increases in the use of accounting service bureaus and
- Direct entry of transations data into a computer will increase by a factor of five. Despite that rate of increase, this practice is expected to be used by less than 15% of all producers.

The producer respondents indicate that:

- A majority of the innovative producers will directly enter transactions data into a computer within five years and
- The capability to document costs and revenues by subunit will become standard agricultural accounting capabilities.

Financial Statement Preparation and Use

The need for skilled financial management has intensified as farms and ranches have grown larger and more complex. Although efficient production management remains essential, the producer's ability to make sound financial decisions is critical as interest rates reach record highs, as inflation forces input costs continually upward and as farm output prices fluctuate from year to year.

Financial decision-making requires a new perception of what a farm is. In the past, it was natural to consider the farm or ranch in terms of the livestock, land and equipment devoted to production of crops and livestock. Today the concept of the farm or ranch as a business unit needs to be considered equally as important as the traditional production orientation. In this business approach, the farm or ranch must be evaluated as a collection of assets and liabilities — striving to maintain and expand its financial viability.

In a business approach to agricultural management, the producer must have tools to financially describe the firm and document its performance. Financial statements are the basic tools available for these tasks. To describe current and future needs of producers, the present and projected use of four basic financial statements was investigated. This section details the respondents' views regarding preparation and use of:

- Balance sheets,
- Income statements,
- Projected cash flow statements and
- Comparison of actual to projected cash flows

In addition, the need for independent verification of financial statements is detailed.

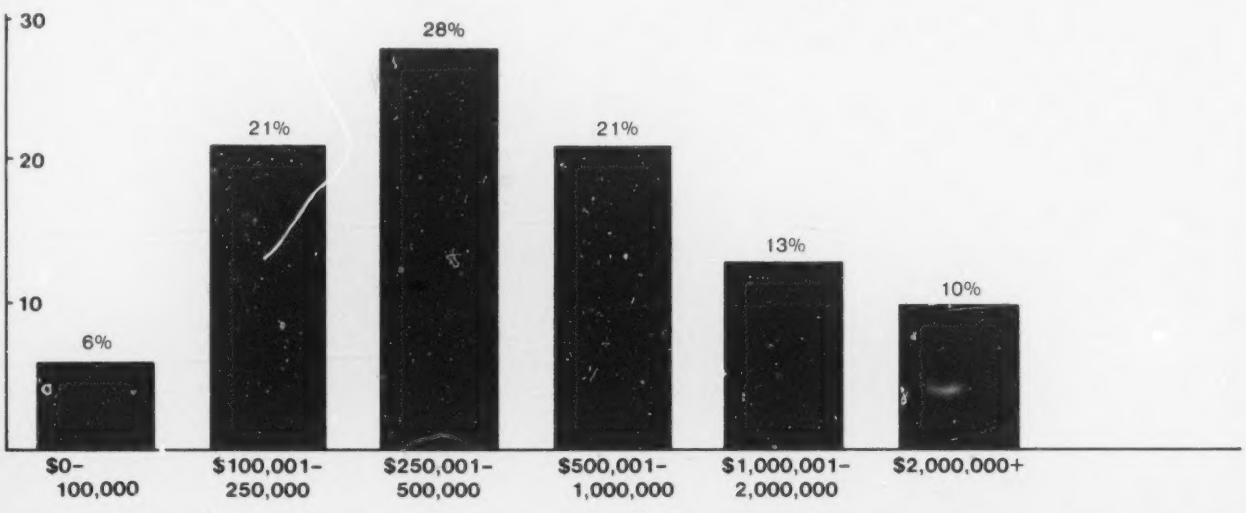
Producer Gross Revenues

Earlier in this report the rapid increase in per farm sales over the last three decades was detailed. Estimates of gross revenue per farm in 1981 for the producer respondents are summarized in Figure G.

Producer respondents tend to operate large commercial farming units. Only 7% reported gross sales of $100,000 or less. Conversely, 44% reported sales of $500,000 or more and 23% indicated sales of more than $1,000,000.

These data suggest that financial management is a complex process on these farm units. As further evidence of

Figure G
Gross farm sales of farms and ranches operated by the producer respondent group.



this complexity, almost 50% of the producers reported having three or more checking accounts for personal and business needs.

Current Use of Financial Statements

Producers

Table 10 displays the producers' responses regarding the financial statements they prepare and how often preparation occurs. About 80% of the respondents prepare balance sheets and income statements. And 74% prepare projected cash flow statements. Only 56% of the respondents, however, compare the actual cash flows with their projections.

Balance sheets and projected cash flow statements are prepared annually by slightly more than 50% of the respondents who prepare them. In contrast, preparation of income statements and of comparisons of actual to projected cash flows on a monthly basis is as common as is annual preparation of these financial statements.

Lenders and consultants

Financial statements provide a means of summarizing and documenting the economic performance of any business. One or more of these statements may be required by lenders and/or outside investors in the agricultural firm. The lender and consultant groups were questioned regarding the extent to which financial statements are being prepared because of lender requirements. Their responses are presented in Table 11.

Balance sheets are required of most producers, with 74% of the lenders and 64% of the consultants expecting it to be required. These estimates are only slightly lower than the rate of actual balance sheet preparation reported by the producers. This finding suggests that, in this respect, the producer respondents are not greatly different from all commercial farmers.

For the other three financial statements, however, the responses of the producers are sharply different from those of the lenders and consultants. The extent to which lenders require the document is sharply lower than the actual rate of preparation reported by the producer respondents. This finding suggests that producers are motivated by internal management needs when preparing the income statement, cash flow projection and comparison of actual to projected cash flows.

Table 11
Lender requirements for financial statements.

Type of statement	Proportion of commercial farmers and ranchers required by the lender to prepare each type of financial statement:	
	Lender estimate	Consultant estimate
	(%)	
Balance sheet	74	64
Income statement	53	42
Projected cash flow statement	50	32
Comparison of actual to projected cash flows	32	16

Expected Future Use of Financial Statements

Each of the producer, lender and consultant respondents was asked to suggest how important each of the four financial statements would be to farmers and ranchers in five years. Their responses indicate the extent to which commercial farmers and ranchers will need to be able to compile and interpret financial statements in the near future. Nearly all of the participants (at least 95% in each group) replied that these financial statements would be either somewhat important or very important to agricultural producers in only five years.

Table 12 details the percentage of respondents who felt financial statements would be *very* important in five years. Three important implications are suggested by those responses:

- The availability of financial statements is regarded as an important future management capability.
- Agricultural lenders tend to regard all financial statements, not just the balance sheet, as important information. Continuing economic pressures may lead to further encouragement by this group for financial statement preparation.

Table 10
Current preparation of financial statements by producer respondents.

Statement	Percent of producer respondents who prepare:	Frequency of preparation				
		Percent of those who prepare each statement:				
		Monthly	Quarterly	Semiannually	Annually	Irregularly
		(%)				
Balance sheet	81	27	9	11	51	2
Income statement	80	41	8	8	41	2
Projected cash flow statement	74	13	10	17	55	5
Comparison of actual to projected cash flows	56	37	15	9	32	7

- The comparison of actual to projected cash flows consistently is viewed as less important than the other financial statements.

Emerging Needs

Cash flow management is a vitally important activity in times of high interest rates and restricted profit margins. The producer needs to monitor and control receipts and expenditures to effectively manage cash flows. As a result, the study team is concerned over the relatively low regard for the statement that compares actual to projected cash flows. In Table 12, note that the percent of respondents indicating comparison of actual to projected cash flows as "very important" is about 10 percentage points below the response rate on the other statements.

Table 12
Future importance of financial statements.

Statement	Proportion of each respondent group predicting it would be very important to prepare the following statements		
	Producer estimate	Lender estimate	Consultant estimate
	(%)		
Balance sheet	79	89	91
Income statement	79	89	80
Projected cash flow statement	82	89	91
Comparison of actual to projected cash flows	70	79	69

This result is not surprising. Present use of this financial tool (as indicated in Tables 10 and 11) lags considerably behind use of the other three more commonly known financial statements. In many non-farm businesses, however, the ability to compare cash flow projections with actual outcomes is considered essential. Effective use of this tool requires the manipulation and summarization of a great deal of data. As producers acquire computers to use in the farm business (detailed later in this report), number handling should be less of a barrier.

These results suggest a need for education and training in both cash management and control. In particular, instruction is warranted in techniques that effectively compare actual and projected cash flows.

Overall, the producer respondents are more likely to prepare financial statements than are commercial farmers in general. Nearly all of the study's participants expect that financial statements will be important to producers in the near future. This expectation suggests a continuing need for education in this area. Producers not currently preparing financial statements should be taught how to develop these reports and the benefits of doing so.

Preparation of financial statements alone does not guarantee improved financial decision-making. Proper interpretation of the information also is required. Many producers need assistance in understanding and interpreting financial statements. As detailed in the Management Consulting Needs section, the survey respondents expressed dissatisfaction with the quality of financial consulting services presently available.

Outside Verification of Financial Statements

As farms and ranches grow larger, the producer's equity capital can become insufficient to fuel further growth. Therefore, reliance on borrowed capital or outside equity funds increases. Providers of these funds may desire or require that the farm or ranch financial statement be verified by an outside party. For large, multi-operator agricultural firms, such outside verification may be a valuable management device to monitor complex financial activities.

In the non-farm sector, verification commonly is attained through the Certified Public Accountant's (CPA) review or audit. A common perception is that reviews or audits are not used by agricultural producers. Therefore, survey respondents were asked to consider the present and future use of outside verifications.

Present use

All three participant groups said that CPA reviews or audits are being performed for some agricultural producers. More than 70% of the lenders were provided with reviewed or audited financial statements by at least one farm or ranch borrower in 1981. Of the consultants, 50% were aware of agricultural producers using a CPA verification in that period.

Of the producers surveyed, 35% had engaged a CPA to review or audit their financial statements. The producers' reasons for obtaining an outside verification are detailed in Table 13. The most noted reason (29%) was that a lender had required the review or audit. The next two most noted responses do not result solely from external requirements. Both reasons, raising outside equity capital (28%) and as an internal management practice (21%), are situations where the complexity of the agricultural business itself can lead to outside verification.

Table 13
Reasons for having obtained CPA review or audit of financial statements.

Reason	Proportion of producers who had statements verified citing each reason[1]
	(%)
Lender required	29
Regulatory authority required	19
Basis for raising equity capital	28
Internal management practice	21
Tax-related	9

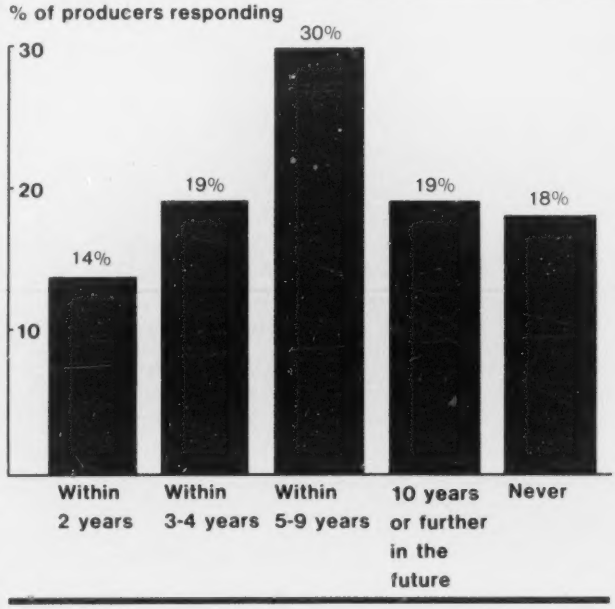
[1] Percentages total more than 100% because some respondents cited more than one reason.

Future use

The previous results suggest that several factors cause producers to have their financial statements verified. If farms and ranches continue to grow more complex, the lender's need for reviewed or audited statements also is likely to intensify. To further explore this possibility, each participant was asked about the likelihood of lenders requiring outside verification of the financial statements provided by their agricultural borrowers.

The producer responses to this inquiry are depicted in Figure H. Although 35% of the producers had already prepared statements that were reviewed or audited, another 37% of the respondents did not foresee lenders requiring outside verification within the next 10 years. Conversely, 33% of the producers predicted such a requirement within the next four years.

Figure H
How soon reviewed or audited financial statements may be required of some commercial farmers and ranchers: producer estimates.



The responses of lenders and consultants provide additional insights. As shown in Table 14, both lenders and consultants expect one of six producers to provide verified statements within only three years. Within seven years these percentages rise to 25% and 22%, respectively.

These responses suggest that lender pressures for reviews and audits of farm and ranch financial statements are likely to increase. Further, the producer responses suggest that many farmers and ranchers are not aware or convinced of this potential need. This lack of awareness may present difficulties to producers if verified statements are required. In particular, farm and ranch accounting systems that provide data of sufficient integrity to undergo outside verification will be required. The previous section's results (on present accounting methods) provide evidence that such systems presently are not in place on many farms and ranches.

Table 14
Proportion of commercial farmers and ranchers who will be required to have an outside verification of financial statements: lender and consultant estimates.

	Proportion of producers required to have an outside verification:	
	Within 3 years	Within 7 years
	(%)	
Lender estimate	15	25
Consultant estimate	14	22

Section Summary

Financial statements are the basic means of documenting financial well-being and performance in any business. Lenders and outside investors, as well as the decision-maker, may use financial statements to analyze the farm or ranch. The study results suggest that financial statements currently are being prepared to the following extent:

- Lenders and consultants believe that balance sheets are required by lenders from a majority of all commercial producers. Income and projected cash flow statements are thought to be required of nearly half of all producers.
- Three of four of the producer respondents prepare balance sheets, income statements and projected cash flow statements. More than one-half of these producers compare actual with projected cash flows.
- Internal management needs appear to underlie the producer respondents' more extensive preparation of financial statements.

The capability to prepare financial statements is seen as a key future management activity:

- More than 80% of *all* respondents believe it will be *very* important for producers to prepare a balance sheet, income statement and projected cash flow statement in five years.
- Fewer, but still a majority, of all respondents regard comparing projected and actual cash flows as a very important activity.

CPA reviews and audits currently are being prepared for some farmers and ranchers:

- Of the producer respondents, one in three reported using outside verification of their financial statements.
- Important reasons cited for obtaining an audit or review were:
  - Lender requirements,
  - Attracting outside equity capital, and
  - Internal management practice.

Each of the respondent groups suggests that outside verification is likely to be required for some agricultural producers:

- Lenders and consultants predict that one producer in six will be required to provide verified financial statements within three years.
- More than a third of the producer respondents believe that some farmers and ranchers will be required to provide verified statements in the near future.
- The emerging importance of financial statements and the potential need for verified statements do not appear to be consistent with the present accounting system capabilities of many farms and ranches. This gap suggests the need for rapid upgrading of accounting procedures for some producers.

Management Consulting Needs

Business management and the compilation and interpretation of financial data are not simple tasks. They are time consuming and often require specialized training and skills to perform satisfactorily. Technical assistance and education may be needed if the types of financial and business management practices suggested in the previous two sections are to be implemented throughout commercial agriculture.

This section investigates the provision of management services. Again, little information currently exists to describe the extent of consultant use by farmers and ranchers. A major portion of this discussion, therefore, will be devoted to detailing the present use of consultants by the producer group. The future importance of several types of services are predicted by all three respondent groups. Further, detailed is the respondents' satisfaction with the quality of consulting services presently available.

Producer Characteristics

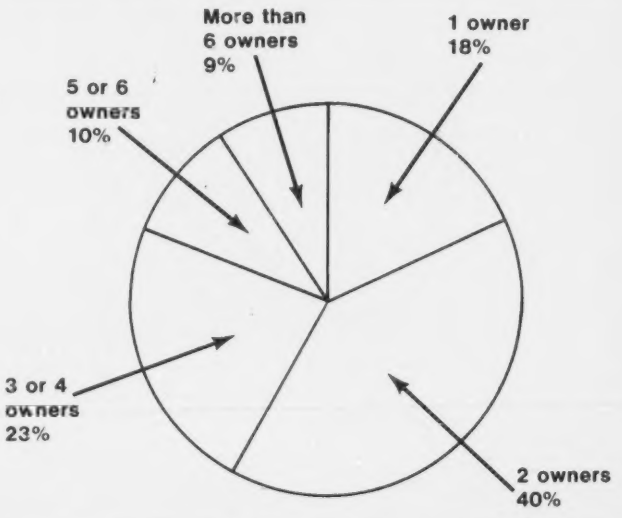
Although the producer respondents manage larger-than-average firms, a factor in their selection for this study was that they operated closely held, family-type farms and ranches. This stipulation was defined to mean that a substantial portion of the management, capital and labor required is provided by the family or families involved in operating that firm.

Although closely held, specialization of production and growth to larger units mean that several people often are involved in managing today's farm or ranch unit. In addition, attraction of equity capital to finance growth results in several individuals having ownership interests in the farm business. Both these factors lead to more complex forms of business organization and the need for specialized assistance.

On average, three individuals have ownership interests in the farms and ranches operated by the producer respondents. This average figure hides considerable diversity, however, as is illustrated in Figure I. The single owner unit is a significant factor (18%) in this sample group. Farms and ranches with two owners, comprise the largest single segment (40%) of the group. Nearly half (42%) of the respondents are from farms or ranches with three or more owners.

At first glance these data seem inconsistent with the concept of closely held or family units. However, a ranch involving parents, two children and their spouses could have six individuals sharing ownership. Further, a large production unit might include, as one activity, a specialized livestock system where several outside investors share the ownership responsibilities. At a minimum, the data in Figure I documents that a producer considered to be operating a family-oriented unit is likely to share ownership of the farm or ranch with several individuals.

Figure I
Distribution of number of owners on producer respondents' farms and ranches.



Managing the ownership structure of the agricultural production unit often requires a complex form of business organization. Table 15 indicates the extent to which organizational forms other than the sole proprietorship are being used by individuals in the producer group. Of these alternative forms, regular corporations and partnerships are the most popular. Multiple business forms are not uncommon among these producers. For example, 23 of the individuals indicating use of a partnership and 19 of those with a regular corporation, indicated having more than one legal entity in association with the production unit. These results suggest that outside counsel has been obtained to implement the desired form of the agricultural business.

Implementing a more complex business form generally is recognized as requiring specialized assistance. As such, the extensive use of alternative business forms by the producer sample indicates that farmers and ranchers are willing to use consultants at least for this purpose.

Table 15
Alternative types of business organization used by the producer respondents.

Organizational form	Producer respondents indicating that some part of their farm or ranch is organized as:
	(Number)
Partnership	80
Limited partnership	10
Subchapter S corporation	26
Corporation	94

Current Use of Consultants

Data documenting the current use of management consultants by agricultural producers are limited. Therefore, this issue is investigated in detail in the study. Three approaches to the question are pursued:

- Documenting the use of consultants to prepare financial statements and income tax returns,
- Defining the extent of estate planning currently being done and by whom, and
- Investigating the use of various types of financially related consultants and services.

This study is focused on financially related information and services, so the present and future use of production-oriented consultants, such as the pest management specialist, is not investigated. This omission is not intended to imply that such assistance is not important or valuable. Use of production-oriented consultants is not pursued in this study simply as a means of reducing the range of issues analyzed.

Reporting income taxes and financial position

Most individuals within the producer group routinely prepare financial statements. Further, the legal complexities of income tax reporting suggest an additional management burden for these producers. One item of interest, then, is the extent to which advisers are being used to assist in these two functions.

Table 16 presents producer responses to the questions of who prepares financial statements and income tax returns. These responses suggest that producers or family members are heavily involved in preparing financial statements. At the same time, considerable assistance is provided by the lender, CPA and bookkeeper, or representative of a service bureau or records association.

In marked contrast to preparation of financial statements, only one of four producers prepares his own income tax returns. The CPA is cited by 65% of the producers as assisting in the preparation of tax returns. Six percent of the producers identified attorneys and "others" as their tax preparers.

Estate tax planning

Agricultural producers often invest in farm or range land as part of operating their business. As land values increased in the 1960s and 1970s, proper estate planning received considerable attention in the agricultural community. Because the individuals interviewed were likely to be concerned about estate planning, the extent to which the producer group used professional estate planning advice was investigated.

Table 16
Current preparers of financial statements and income tax returns for the producer respondents.[1]

Type of preparer	Proportion of respondents noting each category for: Financial statements	Income tax returns
	(%)	
Producer or another family member	95	24
Non-family employee	6	1
Bookkeeper or field representative of service bureau or records association	24	23
Attorney[2]	N.A.	6
Certified Public Accountant (CPA)	29	65
Lender[2]	16	N.A.
Other	2	6

[1] Percentages total more than 100% because more than one response could be noted.
[2] N.A. means category was not listed separately for that column on survey questionnaire.

The will is, of course, the most basic of estate planning tools. Of the producers, 88% indicated that they had a will. Of those who had a will, more than 70% had either made or updated that will in the last five years.

Professional estate tax planning advice had been obtained by many of the producers (Table 17). The attorney was the most often cited (78%) source of estate tax planning assistance. Insurance agents and accountants were asked for estate planning advice by more than 50% of the respondents. The percentages in Table 17 total 209%, which indicates that many producers are using two or three sources of advice in developing an estate plan.

Table 17
Sources of estate planning advice used by producer respondents.

Type of consultant	Proportion of producers obtaining advice from each type of consultant[1]
	(%)
Accountant	51
Attorney	78
Insurance agent	56
Financial consultant	20
Other	4

[1] Percentages total more than 100% because more than one source could be cited.

Table 18
Producers' use of consultants.

Type of consultant	Proportion of producers using consultant within the past 2 years:
	(%)
Attorney	85
Certified Public Accountant (CPA)	76
Cooperative extension agent	82
Farm management consultant	28
Field representative of farm records program	51
Insurance agent	81
Lender	88
Another financial consultant	29
Marketing consultant	49

Use of specific consultants

Three specific situations have been discussed where expert advice is acquired: preparing financial statements, preparing income tax returns and estate planning. To complete this examination of the current use of consultants, the producers' use of several consultant types is described (Table 18).

Because of economic conditions in the last two years, it is not surprising that nine of 10 producers received assistance from their lender. Attorneys, CPAs, cooperative extension agents and insurance agents were consulted by more than 75% of the respondents in the last two years. About half of the producer respondents cited marketing consultants and field representatives of a farm records program. Not all respondents have equal access to farm records associations, so the latter response may indicate a substantial level of involvement where such programs are strong.

Future Uses

The data just presented suggest that consultants are being used by farmers and ranchers such as those in the producer respondent group. In this section, the future need for consultant services by all commercial farmers and ranchers is explored.

Specific advisers

Table 19 lists the percentage of each respondent group that believes various types of consulting services will be important in five years. It is interesting to compare the current use noted by the producer respondents and their perceptions of the future importance of those same services. Fewer producers considered cooperative extension and insurance agents as being important future advisers than used their assistance in the last two years. These are the only categories for which a decline is noted.

In contrast, nine of 10 producers predicted that attorneys, CPAs, lenders and marketing consultants would be important consultants five years from now. The marketing consultant's expected importance (87%) is noteworthy because only 49% of the producer group currently uses a marketing consultant.

Table 19
Importance of consultants to farmers and ranchers five years from now.

Type of consultant	Proportion of each respondent group indicating that the following consultants will be important to farmers and ranchers in five years:		
	Producer estimate	Lender estimate	Consultant estimate
	(%)		
Attorney	93	88	91
Certified public accountant (CPA)	91	92	84
Cooperative extension agent	73	58	68
Farm management consultant	63	64	81
Field representative of farm records program	72	79	73
Insurance agent	68	65	35
Lender	95	100	95
Another financial consultant	68	64	75
Marketing consultant	87	95	89

The remaining two categories, farm management consultant and financial consultant, are regarded as potentially important by six of 10 producers. Although this percentage is relatively low, it is much higher than the rate of current use by the producer respondents. These professions may be relatively new, leading to this lower prediction of importance.

The relationship between current use and expected future importance is investigated more closely in Table 20. Here only the responses of those producers who used the services of the four least used consultants are considered. In each case, more than 90% of producers actually using the consultant predict the adviser will be important to farmers and ranchers in five years. The fewer responses for the farm management and financial consultant categories probably are due to lack of familiarity with those professions because few such consultants now are available to farmers and ranchers.

The lender and consultant predictions of important future agricultural advisers also are detailed in Table 19. The pattern of responses noted in that table is quite consistent among the three respondent groups. The expected future importance of the attorney, CPA, lender and marketing consultant is verified by each group. The lender is cited as an important adviser by the largest number of respondents in all three groups. This result implies that a challenging advisory responsibility awaits tomorrow's agricultural lender.

Types of assistance

Each respondent in the study was asked to evaluate nine specific services for which assistance might be provided. These consulting services were considered in two dimen-

Table 20
Importance of specific types of consultants as viewed by only producers who had used their services within last two years.

Type of consultant	Proportion of respondents who had used service	Proportion of producers currently using consultant who feel consultant will be important in five years
	(%)	
Farm management consultant	28	93
Field representative of farm records program	51	91
Another financial consultant	29	93
Marketing consultant	49	99

sions. The first set of responses in Table 21 indicates the percentage of each respondent group that believes a service would be important to farmers and ranchers in five years. The second set of columns lists the percentage of each respondent group that believes farmers and ranchers will be satisfied five years from now with the present quality and availability of each service.

Of *all* the respondents, (producers, lenders and consultants) 90% agree that five services will be important to farmers and ranchers five years from now:

- Accounting or bookkeeping,
- Financial analysis,
- Estate planning,
- Marketing, and
- Use of computers.

Approximately 80% of *all* the respondents believe two services will be important five years from now:

- Insurance coverage analysis, and
- Retirement planning.

About 60% of *all* respondents believe the remaining two services will be important in five years:

- Personnel management and
- Attracting outside equity.

The consistency of responses across the three groups is significant. In addition, the responses strongly suggest that the group of nine services is regarded as potentially important to producers. To reinforce this finding, the average response for all services, about 86%, also is noted in Table 21.

The respondents' level of satisfaction with the quality and availability of assistance for these nine services is given in Table 21. Overall, only 60% of the producers and 54% of the lenders and consultants indicate that they would be satisfied with the assistance available today if that same level of service was available in five years. Less than half of the respondents indicate satisfaction with assistance in attracting outside equity, marketing and computer use.

An alternative presentation of these results is included in Table 22. Here the service categories have been ranked in order of percentage of respondents regarding them as important in the future. Remember, however, that the fifth-ranked category, use of computers, is regarded as important by more than 90% of the respondents. And the ninth category, personnel management, is considered important by about 60% of the survey participants.

The consistency of results across the three respondent groups is apparent from these rankings. The two services ranked as important by the most respondents, accounting and estate planning, have the highest level of satisfaction. The next three categories (marketing,

Table 21
Importance of and satisfaction with specific types of assistance to agricultural producers in five years.

Category	Proportion of respondents who believe service will be important to agricultural producers five years from now			Proportion of respondents who believe that present quality and availability of service will be satisfactory five years from now		
	Producer estimate	Lender estimate	Consultant estimate	Producer estimate	Lender estimate	Consultant estimate
			(%)			
Accounting or bookkeeping	94	98	98	79	70	71
Financial analysis	94	97	95	60	47	55
Estate planning	99	98	97	74	69	70
Insurance coverage analysis	84	79	78	65	68	62
Retirement planning	86	83	82	67	59	60
Personnel management	68	58	67	57	53	39
Attracting outside equity	69	68	68	43	38	36
Marketing	93	99	95	53	40	47
Use of computers	92	92	93	44	40	45
(Average over nine categories)	86.6	85.8	85.9	60.2	53.8	53.9

Table 22
Ranking of specific types of assistance.[1]

Category	Ranking of importance of services to agricultural producers five years from now			Ranking of satisfaction if present quality and availability of services where available five years from now		
	Producer	Lender	Consultant	Producer	Lender	Consultant
Accounting or bookkeeping	2	2	1	1	1	1
Estate planning	1	3	2	2	2	2
Marketing	4	1	4	7	7	6
Financial analysis	3	4	3	5	6	5
Use of computers	5	5	5	8	8	7
Retirement planning	6	6	6	3	4	4
Insurance coverage analysis	7	7	7	4	3	3
Attracting equity capital	8	8	8	9	9	9
Personnel management	9	9	9	6	5	8

[1] Ranking of 1 indicates highest proportion of respondents indicating service as important or quality of service as satisfactory. Range is from 1 to 9.

financial analysis and use of computers) have relatively low standing in regard to the adequacy of assistance available. This gap between the need for assistance and satisfaction with available services suggests that improvements in the quantity and quality of assistance are required in these areas.

Section Summary

Managing a complex business requires access to many specialized skills. The use of management consultants is one way to acquire such specialized knowledge.

Producer respondents currently use financial and management consultants:

- Bookkeepers, lenders and CPAs are used to aid in the preparation of financial statements.
- More than half of the respondents report using attorneys, insurance agents or accountants when developing estate plans.
- The CPA was the major consultant used in preparing income tax returns.
- More than 75% of respondents reported obtaining the assistance of the following type of consultant in the last two years:
  - Attorney,
  - CPA,
  - Cooperative extension agent,
  - Insurance agent, and
  - Lender.

The study respondents believe that obtaining management assistance will be important to agricultural producers in the future:

- More than 90% believe the following five services will be important:
  - Accounting or bookkeeping,
  - Estate planning,
  - Marketing,
  - Financial analysis, and
  - Use of computers.
- More than 80% believe the following two services will be important:
  - Insurance coverage analysis, and
  - Retirement planning.
- More than 60% believe the following two services will be important:
  - Personnel management, and
  - Attracting outside equity.

The adequacy of the present level of assistance available is a matter of concern to many of the respondents:

- For the nine services listed above, 40% of the respondents indicate that the present quality and availability of assistance will be unsatisfactory five years from now.
- Of those topics noted as important by the most respondents, the deepest concern regarding adequacy of present services is in the areas of marketing, financial analysis, and use of computers.

Growth in the use of specialized farm management, financial and marketing consultants is predicted:

- Currently half of the producer respondents report using a marketing consultant, and one in four reports use of farm management or financial consultants.
- Nine of 10 of all the respondents believe that a marketing consultant will be important to farmers and ranchers five years from now.
- Two-thirds of all respondents believe farm management and financial consultants will be important to farmers and ranchers in five years.

Agricultural Computer Use

In the last decade, the microcomputer has burst onto the business scene. Regard for this implement has been transformed from that of a hobbyist's curiosity in 1976 to today's recognition of it as a tool that could transform the way we live and work. This view has been repeated and rephrased in countless publications and speeches.

Farms and ranches are businesses that generate large amounts of data as they transform basic raw materials to essential food and fiber products. Effective farm and financial management requires careful manipulation and analysis of this data. Today's agricultural decision-maker also requires information generated outside the farm or ranch. Current and future output prices, market situation reports and weather data are examples of needed external information.

The microcomputer residing on the farm or ranch appears to be a tool that can assist producers in making informed decisions. Although much has been written about this technology's potential in agriculture, little is known about the extent of current farm computer ownership. Therefore, each of the study participants was asked to respond to several questions regarding current and future ownership of the computer.

Present Ownership

All commercial farmers and ranchers

As advisers to agricultural producers, lenders and consultants should have an informed opinion regarding computer ownership by producers. Table 23 indicates that both lenders and consultants estimate that 3% of all commercial farmers and ranchers own a computer today. Financial accounting is regarded by these respondents as an important present use of those computers.

The lenders and consultants participating in this study generally were familiar with the computer's potential as an aid in their advising activities. Presently 44% of the lenders and 74% of the consultants use computers in working with their agricultural clients.

Producer respondents

The agricultural producers participating in this study were selected because they were regarded as innovative and likely to be concerned about their information needs. Already 22% of them own a computer (Table 23). Of those with computers, about half (11% of all respondents) directly input receipts and expenditures into the computer as a part of their accounting procedures.

Table 23
Present computer ownership and use for accounting by agricultural producers

Producer respondents	
Producer respondents who currently:	%
Own a computer	22
Directly input accounting data into a computer	11

Lender and consultant responses		
	Lender estimate	Consultant estimate
Commercial farmers and ranchers who currently:		
Own a computer	3	3
Directly input accounting data into a computer	3	2

The producers owning computers were asked to identify their units by brand and model. Most of these computers are small microcomputers with purchase prices ranging from $2,000 to $5,000. Twenty units (37% of the total) are either large microcomputers or small minicomputers. The purchase price of these computers ranges from $7,500 to $25,000. This result suggests that a significant portion of agricultural producers need computers with more than minimal computing and data storage capacity.

In Table 24, several present uses of these computers are identified. Use in financial accounting and preparation of financial statements is cited most often. More farmers responded to this use than indicated that they directly input data into an accounting program. These results are not necessarily inconsistent. Some producers evidently are using the computer for financial statement preparation and analysis but not to capture financial transaction data.

Use of the computer for maintaining crop or livestock production records is the second most common use. Forward planning also is a popular use of these computers. Obtaining marketing information, word processing and monitoring equipment or machinery are cited much less frequently.

Future Ownership

The previous responses suggest that relatively few commercial farmers and ranchers presently own a computer. Of producers regarded as more innovative, however, a

Table 24
Computer uses by producers currently owning computers.

Use	Proportion of those who own computers
	(%)
Preparing financial records and statements	79
Maintaining crop or livestock production records	61
Forward planning	60
Obtaining marketing information	21
Word processing	10
Monitoring equipment or machinery	10

Table 25
Future computer ownership by commercial farmers and ranchers.

	Proportion expecting commercial farmers and ranchers to own a computer in five years
	(%)
Lender estimate	19
Consultant estimate	17

significant proportion are using their own computer. Of course, the microcomputer has been available for only a few years. Considered in that light, the extent of present adoption is significant. The question that naturally follows is, "Will computer ownership spread among commercial farmers in general? How fast?"

Predictions of future ownership and uses

Lenders and consultants foresee a rapid expansion in computer ownership by agricultural producers. As noted in Table 25, both groups believe that one producer in six will own a computer within five years. More striking than the predicted level of use itself is that the future extent of computer ownership is expected to be six times the level of ownership these advisers believe exists today (Figure J).

The producer respondents were asked to indicate the likelihood that the computer would be used in each of four activities within five years (Table 26). More than 82% of the producers predicted that it is very or somewhat likely that farmers and ranchers such as themselves will be using computers to perform each of the four uses noted. In agreement with the lender and consultant groups, the predicted use rates are much higher than the level of current use.

Emerging needs

All three groups participating in this study expect a rapid increase in the ownership and use of computers by agricultural firms within only five years. If such an increase is to occur, farmers and ranchers must rapidly learn how to effectively select and use microcomputers.

Figure J
Present and predicted computer ownership.

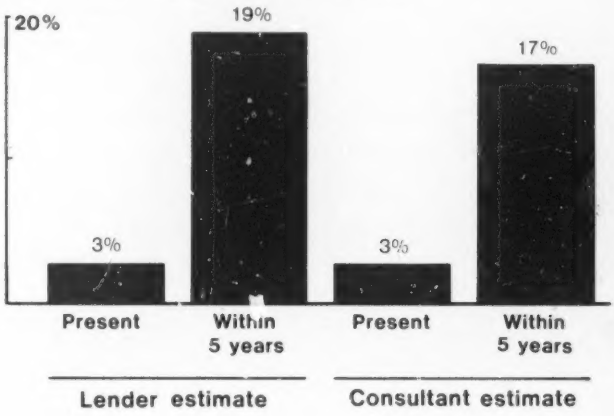


Table 26
Future use of computers by innovative producers.

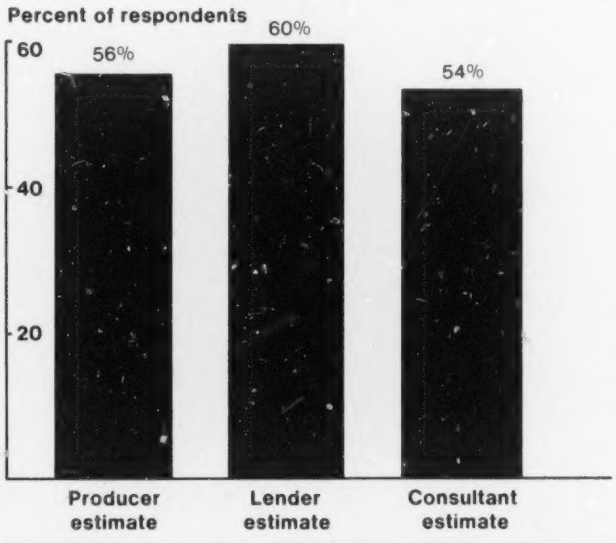
Use	Proportion of producers indicating that in five years farmers and ranchers such as themselves would be likely to have a computer to:
	(%)
Monitor receipts and expenditures	85
Maintain production records	88
Assist forward planning	86
Obtain marketing information	82

Earlier, a concern regarding the quality of computer-related assistance was documented. A majority of producers, lenders and consultants indicates that the present quality of computer-related assistance will be unsatisfactory in the future (Figure K).

Training of farmers and ranchers is likely to be needed if the predicted level of computer use is to occur. To investigate the present perception of need, each respondent was asked to predict the proportion of producers likely to attend workshops on computer use.

Responses to these inquiries for four specific workshop topics are detailed in Table 27. The level of workshop interest (in terms of percentages) indicated by the producer respondents is quite different from that noted by the lender and consultant groups. The meaning of these responses may be fairly similar, however. The lenders and consultants believe that 20% to 25% of all commercial farmers have an interest in computer-related training. The producers assert that 75% to 80% of producers such as themselves have an interest in these workshops. Presumably, the interested farmers and ranchers identified by the producers could be the same group as the 25% of all producers noted by the lenders and consultants.

Figure K
Proportion of each respondent group indicating that the present level of computer related assistance would be unsatisfactory in five years.



Among the four topics, no topic emerged as clearly more or less interesting. This result suggests a wide range of instructional needs exist relating to computer assistance and training.

Section Summary

The small business computer is a new technology. Already it is beginning to be adopted on commercial farms and ranches:

- The lender and consultant groups estimate that 3% of all commercial farmers and ranchers own a computer.
- The producer respondents report that more than one in five of them owns a computer.
- Although most of these computers are small microcomputers, one-third of the producer respondents' units are large microcomputers or small minicomputers.
- These tools are primarily used for financial accounting and management, maintaining production records, and forward planning.

A substantial expansion in computer ownership and use by agricultural producers is predicted by the respondents:

- Lenders and consultants estimate that one producer in six will own a computer within five years. In the United States alone, that estimate implies that 50,000 farm businesses would own a computer by 1987.
- More than 80% of the producer respondents believe that farmers and ranchers such as themselves are likely to use a computer for the following tasks in five years:
  - Maintain production records,
  - Monitor receipts and expenditures,
  - Assist in forward planning, and
  - Obtain marketing information.

Table 27
Interest in computer-related workshops.

Workshop topic	Proportion of each respondent group indicating that producers are likely to be interested in attending the following workshops: Producer estimate	Lender estimate	Consultant estimate
	(%)		
Selecting a computer system	74	22	26
Computerized forward planning	82	21	22
Selecting and using computerized accounting systems	82	25	27
Maintaining production records with a computer	84	22	26

These responses foretell a massive increase in farm and ranch ownership and use of computers. Such a rapid increase is not likely to occur without the availability of effective assistance and training. The respondents believe that many farmers and ranchers are interested in computer training:

- The producer respondents suggest that three of four of farmers and ranchers such as themselves would be interested in computer-related training.
- The lender and consultant respondents indicate that of all commercial producers, one in four would be interested in such training.
- Although expressing a strong interest in computer training, a majority of all respondents indicate dissatisfaction with the present quality and availability of computer-related assistance.

Appendix

Comments

In contrast to the historical concentration on physical production, it is now becoming accepted that success in the farming and ranching industry requires focused attention on business and financial management. As operations grow more complex and sophisticated, the need for information and assistance in organizing, evaluating and interpreting data increases dramatically. Producers need information to make informed management decisions and to support their requests for borrowing money. To evaluate loan requests, agricultural lenders need far more information than has traditionally been provided.

Farmers and ranchers are increasingly relying on outside assistance for guidance and service to meet their needs. As needs extend beyond the "physical" input/output stage, professional help in such areas as accounting, legal, finance, marketing and information processing takes on new significance. Unfortunately, little documentation has been available to guide potential providers of these needed services to the specific voids being experienced by producers. Furthermore, university and cooperative extension educational and research efforts in agricultural business management have suffered from a lack of knowledge when addressing the information needs of producers.

This survey was designed to discover current practices relating to accounting, financing, use of consultants and use of computers by innovative farmers. More importantly, participants were queried as to what their future needs will be.

The survey goal in selecting producer participants was to involve innovative farmers from Canada and the United States — geographically distributed to represent all major agricultural production types — who would be in the best aggregate position to express present and future information needs of emerging farm and ranch operations.

A second survey goal was to identify farmer and rancher information needs as perceived by agricultural lenders and consultants. It was concluded, however, that these two groups of participants would have to respond based on perceptions of commercial farmers and ranchers — defined as those operations with more than $100,000 in gross sales per year. Lenders and consultants often play a central role in determining what information should be generated by farmers and ranchers. Thus, the perceptions of these two groups will provide insight into practices that may be implemented during the next five years.

Sponsors

This survey study has been prepared as a joint venture of the Department of Agricultural Economics, College of Agriculture, University of Illinois at Urbana-Champaign and Arthur Andersen & Co., with participation by the Survey Research Laboratory, University of Illinois at Urbana-Champaign.

Arthur Andersen & Co. is among the largest of the international accounting and professional services organizations. To assure the highest-quality services, the firm has long been committed to the concept of industry concentration. Personnel develop experience in a particular industry by working closely with clients in that industry, attending the firm's intensive industry training programs, participating actively in trade association activities and maintaining close liaisons with industry representatives and related government agencies. As a result of such activities, personnel have an intimate knowledge and understanding of the business environment related to the industry in which they practice.

Established in 1867, the University of Illinois at Urbana-Champaign is the Land Grant institution in Illinois. As such, it has major responsibility for agricultural research and education in Illinois. Its education programs include resident instruction and extension activities relating to the rural economy. Extensive programs in farm and financial management are carried out by the Department of Agricultural Economics. These programs cover the spectrum of topics relating to the efficient management and organization of the farm firm. A major activity has been the Department's liaison with the Illinois Farm Business Farm Management Association, a cooperative of agricultural producers.

Study Team

The team responsible for designing the survey methodology and summarizing the survey results includes:

- **Norman Carlson**—a partner in the Small Business Division of the Chicago office of Arthur Andersen & Co., and a certified public accountant. He has spent 17 years serving entrepreneurs and small and closely

held businesses and heads the division's agribusiness activity. He is also a member of the farm and ranch subcommittee of the firmwide Agribusiness Industry Team.

- **Thomas L. Frey**—a professor of agricultural finance in the Department of Agricultural Economics, University of Illinois at Urbana-Champaign. Frey is a certified public accountant and spent eight years as an agricultural lender. He is involved in teaching, applied research and extension of agricultural finance and accounting.

- **Linda Lannom**—a manager of operations for the Urbana office, Survey Research Laboratory, University of Illinois. She coordinated activities for the Survey Research Laboratory in data collection, reduction and processing of data in the survey.

- **Robert D. Mitchum**—a manager in the Small Business Division of the Chicago office of Arthur Andersen & Co. and a certified public accountant. He has spent seven years serving small and closely held clients, including agribusiness entities. He is a member of the Agribusiness Committee of the Illinois Society of Certified Public Accountants.

- **Steven T. Sonka**—an associate Professor of Farm Management in the Department of Agricultural Economics, University of Illinois at Urbana-Champaign. He is leader of the farm management and production economics research group. He heads the research projects in the role of information, particularly accounting and computer systems, in the management of farm firms.

- **Mark W. Zumbach**—a tax manager in the Small Business Division of the Chicago office of Arthur Andersen & Co. and a certified public accountant. He has spent eight years providing tax consultation to farm and other small business clients. Mark authored a thesis on farm management consulting services and has extensive background in the production and business aspects of operating a farm.

Survey Procedures

Survey instruments were developed through collaboration among researchers from the Department of Agricultural Economics, survey specialists from the Survey Research Laboratory, and representatives of Arthur Andersen & Co. Length of the instruments was 19, 10, and 11 pages, respectively, for producers, lenders, and consultants.

Three groups of survey participants were contacted — farmers and ranchers, agricultural lenders, and agricultural consultants. The target response from producers was established at approximately 250 farmers and ranchers regarded as innovative and concerned about financial and business management issues, with a geographic distribution comparable to the distribution of farms grossing more than $100,000. The target response from lenders was 160 participants, and for the consultants a target of 80 responses was established.

To identify potential participants, extensive phone contacts were made with various college of agriculture faculty, individuals in the agricultural finance community, and agricultural consultants throughout the United States and Canada. Individuals nominated were contacted by phone to seek their participation in the survey by allowing a survey instrument to be mailed to them. Survey instruments were then mailed to all who agreed to review the survey instrument.

The study was conducted by surveying the farmers and ranchers first, followed by the lender survey and lastly by the consultant survey. The entire survey process for any one group did not exceed 10 weeks. To achieve prompt responses, reminder cards were mailed to all nonrespondents, and reminder phone calls followed the reminder cards. The process generated response rates of 80.1%, 88.7%, and 84.5%, respectively, for producers, lenders, and consultants as detailed in Table 1 in the text. The first survey instruments were mailed in April 1982 with the process completed by August. In addition to offering valuable consultation on development of the survey instruments, the Survey Research Laboratory was in charge of the survey process from printing of the survey instruments, through mailing them, receiving and coding data, keying it in and machine cleaning, and achieving computer summaries of the results. To better understand the results, characteristics of the three groups are tabulated and presented in the following tables.

Table 28
Regional distribution of farms and ranches the United States grossing more than $100,000 in 1978, and the corresponding percent of producer respondents in the survey, by region.

Region	Farmers and ranchers with gross sales of $100,000 or more in 1978	Distribution of farmer and rancher respondents by region
Northeast	7.1%	6.5%
Appalachian	6.9	9.4
Southeast	7.6	6.9
Lake States	9.3	10.6
Corn Belt	27.7	38.2
Delta States	6.7	2.0
Northern Plains	10.9	4.5
Southern Plains	7.6	6.9
Mountain	6.7	8.1
Pacific	9.6	6.9
Respondents	100.0%	100.0%

Table 29
Number of survey respondents by region and type of respondent.

	Type of Survey Respondent		
Region	Producers	Lenders	Consultants
Canada	23	6	3
U.S. Region:			
Northeast	16	7	4
Appalachian	23	12	6
Southeast	17	7	5
Lake States	26	21	16
Corn Belt	94	63	32
Delta States	5	6	—
Northern Plains	11	15	4
Southern Plains	17	9	3
Mountain	20	12	3
Pacific	17	21	11
Respondents	269	179	87

Table 30
Age of farmer and rancher respondents.

Age	No. of respondents	Percent of those responding
25 - 29	9	3.4
30 - 34	25	9.4
35 - 39	37	13.9
40 - 44	51	19.2
45 - 49	35	13.2
50 - 54	41	15.4
55 - 59	28	10.5
60 - 64	28	10.5
65 and over	12	4.5
Respondents	266	100.0

Table 31
Number of years that farming or ranching has been the main occupation of the respondents.

Years that farming or ranching has been the main occupation	No. of respondents	Percent of those responding
Under 10 years	39	14.6
10 - 15 years	53	19.9
16 - 20 years	36	13.4
21 - 25 years	53	19.9
26 - 30 years	26	9.7
31 - 35 years	31	11.6
Over 35 years	29	10.9
Respondents	267	100.0

Table 32
Highest level of formal education completed by farmer and rancher respondents.

Level of education	No. of respondents	Percent of those responding
Less than high school graduate	8	3.0
High school graduate	50	18.8
Some College	55	20.7
College graduate	112	42.1
Some graduate school	15	5.6
Graduate or professional degree	26	9.8
Respondents	266	100.0

Table 33
Number of lender respondents by employer category.

Employer	No. of respondents	Percent of those responding
Commercial bank	115	64.6
Production Credit Assn.	29	16.3
Federal Land Bank Assn.	7	3.9
District Farm Credit	12	6.7
Farmers Home Administration	9	5.1
Other	6	3.4
Respondents	178	100.0

Table 34
Number of farm and ranch borrowers that respondent lenders had direct contact with during calendar year 1981.

No. of borrowers	No. of respondents	Percent of those responding
Less than 20	14	9.0
20 - 50	40	25.8
51 - 100	40	25.8
101 - 150	26	16.8
151 - 200	21	13.6
Over 200	14	9.0
Respondents	155	100.0

Table 35
Age of lender respondents.

Age	No. of respondents	Percent of those responding
20 - 24 years	2	1.1
25 - 29	12	6.8
30 - 34	35	19.8
35 - 39	27	15.3
40 - 44	31	17.5
45 - 49	26	14.7
50 - 54	19	10.7
55 - 60	16	9.0
60 - 64	6	3.4
65 and over	3	1.7
Respondents	177	100.0

Table 36
Number of years that lender respondents have been involved in making farm loans.

Years involved in making farm loans	No. of respondents	Percent of those responding
Under 10 years	64	36.4
10 - 15	49	27.8
16 - 20	34	19.3
21 - 25	15	8.5
26 - 30	10	5.7
31 - 35	2	1.1
Over 35	2	1.1
Respondents	176	100.0

Table 37
Highest levels of formal education completed by lender respondents.

Level of education	No. of respondents	Percent of those responding
High school graduate or less	4	2.3
Some college	18	10.3
College graduate	69	39.7
Some graduate school	40	23.0
Graduate or professional degree	43	24.7
Respondents	174	100.0

Table 38
Age of consultant respondents.

Age	No. of respondents	Percent of those responding
25 - 29 years	4	4.7
30 - 34	13	15.3
35 - 39	15	17.6
40 - 44	17	20.0
45 - 49	16	18.8
50 - 54	9	10.6
55 - 59	4	4.7
60 - 64	6	7.1
65 over	1	1.2
Respondents	85	100.0

Table 39
Highest level of formal education completed by consultant respondents.

Level of education	No. of respondents	Percent of those responding
Some college	5	5.8
College graduate	20	23.3
Some graduate school	8	9.3
Graduate or professional degree	53	61.6
Respondents	86	100.0

Table 40
Classification of consultant respondents.

	Classification by Type of Consultant	
Classification category	Number of respondents	Percent of total responding
Teaching/extension	31	36.0
Financial consultants	19	22.1
CPA's and attorneys	13	15.1
Farm managers	11	12.8
Farm records fieldmen	4	4.7
Lenders	5	5.8
Other	3	3.5
Respondents	86	100.0

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